Water for PCAPP: Where It Comes From, Where It Goes

Pueblo Chemical Agent-Destruction Pilot Plant

A Partnership for Safe Chemical Weapons Destruction

Where does the U.S. Army Pueblo Chemical Depot get water? How much is available for the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP)?

A series of wells located on Pueblo Chemical Depot gives the depot an annual capacity of 177 million gallons (545 acre-feet) of water. The depot pumps roughly 97 million gallons (300 acre-feet) of that capacity each year, leaving a balance of 80 million gallons (245 acre-feet). Even though these wells are located on the depot, all the water pumped is purchased from the Pueblo Board of Water Works and the Colorado Water Protection Development Association.

Of this amount, about 50 million gallons (150 acre-feet) per year is available for use by the Pueblo Chemical Agent-Destruction Pilot Plant and is sufficient to meet the plant's needs. The remainder is available for other depot activities.

How much water will be used for dust suppression during construction?

The amount of water needed for dust suppression will vary depending on the work being done. The peak amount will be about 218,000 gallons per day.

How much water will the PCAPP facility use when the plant is operating?

In the optimized design, in which all wastes would be shipped offsite, the plant would consume about 55,800 gallons of water per day. Sanitary usage is 25,540 gallons per day. If hydrolysate is not treated onsite, water shipped offsite with the hydrolysate would be 26,200 gallons per day. In that scenario, the total amount of water expected to be shipped offsite in hydrolysate during the life of the plant would be about 7.7 million gallons. The remaining consumption is attributed to 2,590 gallons per day evaporative losses from the cooling tower, additional evaporative losses from the off-gas treatment system, and liquid discharges.

In the original design, in which all wastes were to be treated onsite, consumption would have been 100,400 gallons per day. Evaporative losses from the cooling tower accounted for 69,120 gallons per day. The sanitary usage of 37,800 gallons per day was recovered by a sanitary waste treatment unit and reused by cooling tower. Evaporative losses from off-gas treatment systems and biotreatment systems account for the majority of the remaining 31,280 gallons per day of losses.

How does projected PCAPP water consumption compare with other uses?

With a daily consumption of 55,800 gallons, the optimized plant would use about 20 million gallons of water per year. This is equivalent to:

- The annual water usage of 135 American households. (According to the American Water Works Association, average annual household water consumption is 146,000 gallons per year.)
- The water needed to grow 40 acres of alfalfa in Colorado. (One acre of alfalfa requires 488,776 gallons per season, according to Water Colorado.)

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